

II. General Remarks Concerning This Response

Claims 1-27 are currently pending in the present application. No claims have been amended, added, or canceled. Reconsideration of the claims is requested.

5 The PTO-326 form in the current Office action notes that the formal drawings that were filed on 01/18/2002 are acceptable, yet it also notes that there are draftsperson's objections on the PTO-948 form. In addition, the PTO-948 form refers to the informal drawings that were filed with the
10 application. Thus, it is unclear whether the PTO-948 form may have been referring to the latter formal drawings or whether there are any objections to the formal drawings. Applicant confirmed with the examiner by telephone that the PTO-948 was associated with the originally filed informal drawings.

15 However, Applicant has noticed that there are discrepancies between the drawings and the specification. The drawings contain element numbers 610, 620, and 630, but the specification contains element numbers 600, 610, and 620, respectively. This problem has been addressed by filing new
20 formal drawings.

III. Summary of Telephonic Interview

Applicant thanks Examiner Robinson for the telephonic interview of 10/08/2003. During this interview, Applicant
25 argued against the rejections under 35 U.S.C. §§ 102 and 112. At the time of the interview, the examiner did not agree to accept Applicant's arguments, which are formally presented hereinbelow.

30 Moreover, Applicant did not agree with the examiner's repetition of the arguments against the claims as presented within the 112 rejections. Applicant noted that minor amendments to the claims would be considered if the examiner

agreed that the claims would be allowable by withdrawal of the pending prior art rejections. Alternatively, Applicant noted that minor amendments to the claims would be considered if the examiner agreed with Applicant's assertion that the minor
5 amendments to the claims would not require the examiner to adopt a new interpretation of the claims, thereby causing Applicant to lose one of Applicant's two considerations of the claims. Since the examiner disagreed with both of those requests, Applicant has declined to amend the claims as
10 requested.

IV. 35 U.S.C. § 112, ¶ 2

The Office action has rejected claims 1-27 under 35 U.S.C. § 112, ¶ 2, as being indefinite for failing to
15 particularly point out and distinctly claim the subject matter which applicant regards as the invention. This rejection is traversed.

Quoting the entire rejection from the Office action, the rejection states:

20 Claims 1-27 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

25 Regarding independent claims 1, 10, 11, and 20 the following claim language is vague: "the metadata indicates database limitations" [note claim 1 lines 3-4; claim 10 lines 3-4; claim 11 lines 4-5; and claim 20 lines 6-7]. The meaning of the term "database limitations" is not clear. It is unclear as to whether
30 the term is used as a parameter for certain database conditions or is referencing limitations of the database. Claims 2-9, 12-19, and 21-27 are rejected based upon dependency.

Regarding claims 6, 7, and 9 the following limitation is vague: "determining whether or not the object attribute data has characteristics that conflict with the database limitations indicated within the retrieved metadata; and in response to a determination ... modifying the object attribute" [see claim 6; claim 7; and claim 9]. Determining steps appear to be missing. How does the method determine whether or not the object attribute data has characteristics that conflict with the database?

Applicant notes that the phrase "the metadata indicates database limitations" may be interpreted as "the metadata contains information about limitations of the database". Moreover, the claims are read in light of the specification, and the specification lists various kinds of exemplary database limitations on page 18, lines 15-18: "This provides current information at runtime about the database constraints, attribute size limits, data type limits, and other database limitations." Also, the specification states (e.g., page 22, paragraph 2) that "the metadata information 620 contains ..." other information, and the specification then continues to describe examples in which a particular record field in the metadata information indicates a particular type of constraint. Applicant asserts that an understanding of the term "database limitations" would be apparent to one having ordinary skill in the art, and Applicant asserts that the current claim language is sufficient to claim the present invention.

With respect to the examiner's statement about dependent claims 6, 7, and 9, Applicant notes that the cited claim language appears in dependent claims 6, 16, and 23, and Applicant believes that the examiner's statement should refer to dependent claims 6, 16, and 23. The examiner has objected to the two elements in claim 6, which read:

determining whether or not the object attribute data has characteristics that conflict with the database limitations indicated within the retrieved metadata; and

5 in response to a determination that the object attribute data has characteristics that conflict with the database limitations, modifying the object attribute data so that the object attribute data does not have characteristics that conflict with the database limitations.

10 Applicant asserts that the determining step is not missing; clearly, the determining step is one of the elements of the claim.

In answer to the question in the objection, this step is
15 described in more detail in the specification, e.g., with respect to Figures 6B and 8B. In addition, on page 22, lines 4-15, the specification states:

20 More importantly for the present invention, however, metadata information 620 contains database constraints, size limits, and other potential database limitations to be communicated to clients of the object model. In metadata information 620, each record field has an associated constraint "Nullable" that indicates whether or
25 not an object attribute can be "NULL" when stored within the database. In addition, each field element has a sub-element "Length" that indicates the maximum length of the object attribute that may be stored within the database field, thereby providing a type of size constraint.

30 Applicant asserts that one having ordinary skill in the art can understand the manner in which data to be stored in a database can be checked against a maximum length constraint that protects a database field from object data that is too
35 long, which is merely one example of the claim language "determining whether or not the object attribute data has characteristics that conflict with the database limitation ...". Moreover, Applicant is allowed to claim more broadly and briefly than what is described in the specification.

Applicant asserts that the specification provides sufficient support for the present claims.

V. 35 U.S.C. § 102(e)-Anticipation-Hattori et al.

5 The Office action has rejected independent claims 1-5, 11-15, 20, 22, and 27 under 35 U.S.C. § 102(e) as anticipated by Hattori et al., "Object-Oriented Data Storage and Retrieval System Using Index Table", U.S. Patent No. 6,539,388 B1, filed 10/22/1998, issued 03/25/2003. This rejection is traversed.

10 With respect to the first element of independent claim 1, i.e. "retrieving metadata from the database, wherein the metadata indicates database limitations", the rejection states that Hattori et al. discloses the first element as follows:

15 "metaindex management section element 440 and database 310 figure 15; figure 21". The metaindex management section 440 is described in Hattori et al. as follows:

20 The metaindex management section 440 manages a metaindex as index data which is secondarily given to an object index of primary level, and retrieves an object having the index from objects managed by the object management device 100, on the basis of a description using the given metaindex. A metaindex means an index of abstract level corresponding to the view for an external application. The basic index is not limited to an index of primary level. A metaindex can be secondarily given to another metaindex. An index of primary level means an index description used to access an object having the index and stored, unlike a data index or indirect data index itself which directly or indirectly points a data component.

35 As should be apparent by reference to the above-cited section and elsewhere within Hattori et al., a metaindex is a type of abstract index into the database. In contrast with the present invention, the metaindex of Hattori et al. is not similar to the metadata in the present invention in which the

metadata provides information about limitations or constraints of the database. Applicant asserts that it appears that the above-noted features in Hattori et al. have been used as the basis for a rejection solely because of a similarity in terminology between an element in Hattori et al. and an element in the claims; in other words, the rejection improperly attempts simple term-matching, which is not a proper basis for a rejection if the elements are not similar. More importantly, Hattori et al. fails to disclose the first element of independent claim 1 as asserted by the rejection, and Hattori et al. is therefore deficient as an anticipatory reference.

With respect to the second element of independent claim 1, i.e. "retrieving semantic information from a mapping repository, wherein the semantic information indicates a manner in which object attribute data is stored in the database", the rejection states that Hattori et al. discloses the second element as follows: "figure 16; figure 38; column 22 lines 4-28; col. 30 lines 19-36; col. 17 line 47 through col. 18 line 41". Applicant asserts that the rejection is purposely unclear about which element in Hattori et al. discloses the second element in claim 1 because the rejection points to two different figures and approximately two columns of text in Hattori et al. without providing a definitive statement about any of the dozens of elements in the text and figures that supposedly disclose the second element of independent claim 1. More importantly, Applicant asserts that the step of "retrieving semantic information from a mapping repository ..." is not disclosed in Hattori et al.. Again, Hattori et al. fails to disclose an element of independent claim 1 as asserted by the rejection, and Hattori et al. is therefore deficient as an anticipatory reference.

Furthermore, the rejection does not provide any statement about the third element of claim 1, i.e. "storing object attribute data in the database according to the semantic information and the metadata". The claim clearly recites that the metadata information and the semantic information are both used when storing object attribute data in the database, not just semantic information. This feature is not disclosed in Hattori et al.. Given that the rejection of claim 1 does not explain how Hattori et al. discloses the third element of claim 1 and that Hattori et al. fails to disclose the third element of claim 1, Hattori et al. is further deficient as an anticipatory reference.

With respect to dependent claims 2-5, these claims are patentable for the same reasons as provided above with respect to independent claim 1 from which they depend. In particular, with respect to claim 3, i.e. "storing the metadata using markup language to identify the metadata", Hattori et al. does not disclose this feature because Hattori et al. does not disclose the use of metadata as described above with respect to independent claim 1.

Furthermore, with respect to dependent claim 4, i.e. "wherein the semantic information provides a mapping between object attributes and records in a relational database", the rejection states that this feature is shown in Hattori et al. at column 32, lines 46-49, as follows: "wherein the index management section has a metaindex management section for holding a correspondence between a metaindex secondarily added to the index and the index as a base of the metaindex". Applicant notes that this argument is merely a continuation of the attempt at an improper term-matching argument that was applied against the first element of claim 1.

As noted above, Hattori et al. does not disclose at least one element of independent claim 1 as is required for a proper anticipation rejection. As stated at MPEP § 2131: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Hence, the rejection of independent claim 1 is improper, and Applicant requests that the rejection be withdrawn. Dependent claims 2-5 are patentable for the same reasons as independent claim 1 based on their incorporation of claim 1 and for the additional reasons as provided above. Similarly, claims 11-15, 20, 22, and 27, are patentable; claims 11-15, 20, 22, and 27, which are directed to apparatus claims and computer program product claims, were rejected as being "parallel" to the claimed methods in claims 1-5.

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VI. Conclusion

It is respectfully urged that the present patent application is patentable, and Applicant kindly requests a Notice of Allowance.

For any other outstanding matters or issues, the examiner is urged to call or fax the below-listed telephone numbers to expedite the prosecution and examination of this application.

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Respectfully submitted,



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